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Spring 2020

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ANSC

{animal science}

Spring 2020



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Animal Science - UA



In the Loop



Michael Looper
Department Head

Hello from your Department of Animal Science. I hope this newsletter finds you healthy and safe. As we all are very much aware, COVID-19 has changed the way we work and interact with each other, our students, and stakeholders. As I write this column, approximately 75% of Animal Science faculty and staff still are isolated and working from home. There does appear to be glimmers of improvement. Adhering to the Governor's office and state health officials' guidelines, plans to gradually re-open our offices and facilities are currently being discussed by the University of Arkansas System and Division of Agriculture administration. The U of A Board of Trustees passed a resolution to begin preparing system campuses to open for in-person classes in the fall semester.

Although our work location changed during this time, we remain very much #StillOnTheJob. The U of A began offering all instruction through online delivery on March 16. Although challenging to move all course materials online in a short amount of time, Animal Science faculty did an outstanding job making the transition.

The end of each semester is always an exciting time. Graduation is the culmination of years of hard work. Recognizing there would not be an official graduation ceremony, the department virtually recognized, via social media platforms, our students completing B.S., M.S., and Ph.D. degrees this spring. Congratulations to Sophia Landers, Gabrielle Abbott, Noah Black-Ocken, and Mersady Redding for being named U of A Seniors of Significance. This spring, 29 students applied to veterinary medicine or medical school, a record number of applicants. As of mid-May, 22 have notified us they have been accepted into various veterinary medicine/medical schools; we do anticipate additional acceptances. Over the next few weeks, we will continue to recognize and acknowledge our departmental and college award winners, scholarship recipients, and Graduates of Distinction. Congratulations to all graduates, and award and scholarship recipients. I express my

sincere gratitude to the Animal Science faculty for doing an outstanding job preparing our next generation of animal scientists.

I want to congratulate our U of A ranch horse and U of A livestock judging teams! Both teams were very busy early in the semester. Congratulations to the livestock judging team for winning the 2020 South-eastern Livestock Expo Livestock Judging Contest held in Montgomery, Ala. Nice job Bryan Kutz and team! Read more about other judging competitions in the following pages.

Departmental research continues to grow exponentially. In 2019, Animal Science faculty authored or co-authored over 40 peer-reviewed publications and were awarded \$1,109,764 (annual share of active grants) in grant dollars, and \$265,671 for other financial support (in kind gifts, USDA-ARS support, industry sponsorship, etc.) of their programs. It is my pleasure to welcome two new additions to the faculty ranks. Brittni Littlejohn was selected for our physiological genetics position. She received her Ph.D. at Texas A&M University. Kelly Vierck was selected for our meat science/muscle biology position. She received her Ph.D. at Texas Tech University. We look forward to both of them joining us in June.

Just like livestock producers throughout this state, research and teaching animals on the Arkansas Agricultural Experiment Station farms must still be cared for and maintained daily, even during a pandemic. I greatly appreciate our farm/unit employees continuing to do an amazing job caring for our animals while practicing social distancing to protect their own health, as well.

Your support of this department has always been appreciated. As our way of life has dramatically changed, please let us know if we can assist you in any way. The U of A System Division of Ag has developed a comprehensive website for COVID-19 resources. I encourage you to visit www.uaex.edu/COVID19 for more information. As always, feel free to contact me [looper@uark.edu; (479) 575-3745].

Michael Looper
Department Head

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The Department of Animal Science announced its 2020 Awards of Distinction.

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Cover Photo by: Lauren Husband



Support Animal Science Department Scholarships

By buying a chairback in the Pauline Whitaker Animal Science Center

You can support scholarships for Department of Animal Science students and receive permanent recognition by purchasing a chairback in the Pauline Whitaker Animal Science Center. Purchases are tax deductible and can be made in the name of an individual, a business, or in honor or memory of a loved one or friend. If you are a former judging team member and would like to purchase a seat in honor of your judging team, contact Bryan

Kutz at 479-575-4337. Chairbacks are available for a minimum donation of \$500, although many individuals have donated more. If you would like to help with scholarships by purchasing a chairback, fill out the form to the right and mail it with a check made out to Agricultural Development Council, with a notation of Arena Chairback to the address on the form at the right.

Chairback Order Form

Please use separate page if needed.

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Please list information desired on chairback:

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University of Arkansas

1120 W. Maple

Dept. of Animal Science

Fayetteville, AR 72701

Department Announces 2020 Awards of Distinction Recipients

The Department of Animal Science announced its 2020 Awards of Distinction.

The Awards of Distinction recipients are: Advanced Graduates of Distinction – Johnny Gunsaulis and Paul Beck; Graduate of Distinction – Sam Tabler; Friend of the Department – Buck Pendergraft. Each awardee was recognized for his contributions to the animal science industry and research, as well as to the Department of Animal Science.

Johnny Gunsaulis (M.S.) received his bachelor's in Animal Science from the U of A at Fayetteville in the fall of 1987.

After that, he worked for Simmons Foods in live poultry production; Washington County Conservation District preparing nutrient management plans for farms; and Tyson Pork Group where he was responsible for litter and mortality management and serviced commercial finishing farms.

This varied agricultural background prepared him well for a position with the Cooperative Extension Service beginning in 1998. He spent 15 years in Washington County as a county agent in water quality, agriculture and 4-H.

During his career with the Extension Service, he returned to the U of A Department of Animal Science and received



Johnny Gunsaulis

his master's degree with a focus on forages.

Johnny was promoted to staff chair of the Benton County Cooperative Extension office in 2014. During his time with the Extension Service, he coached state-winning beef quiz bowl teams, livestock skills teams, livestock judging teams, dairy judging teams, dairy quiz bowl teams, was a shooting sports instructor, ATV safety instructor, and had the chance to travel on several national 4-H trips. Several 4-H

members he worked with went on to be leaders in livestock industries.

His adult programming responsibilities were in the areas of livestock and forages. During his 20+ year career, he taught thousands of producers in the areas of pesticide safety, forage quality and selection, beef cattle management, and pasture and hay land fertilization and weed control. He served on statewide committees to develop new programs and developed printed materials that were used statewide.

Paul Beck (Ph.D.) was raised on a wheat and beef cattle farm in Oklahoma and has degrees from Oklahoma State University (B.S., 1990 and M.S., 1993), University of Arkansas (Ph.D., 2003) and Southern Arkansas University (MBA, 2017).

Paul joined the faculty of the University of Arkansas Department of Animal Science at the Southwest Research & Extension Center in 2004 with research and Extension appointments. Paul was promoted to associate professor in 2008, and



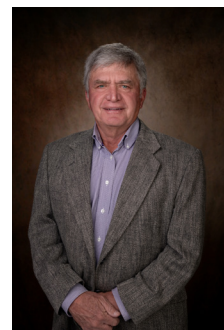
Paul Beck

professor in 2012. Paul retired from the University of Arkansas in 2018 after 21 years and returned to Oklahoma State University as associate professor, beef cattle extension specialist occupying the Dennis and Martha White Endowed Chair. Paul conducts research and Extension programming in feedlot and stocker cattle nutrition, health, and management. Paul is an internationally recognized expert in beef production systems and grazing cattle management.

Nationally, Paul's work has been recognized by the American Forage and Grassland Council, Merit Award, the American Society of Animal Science, Early Career Achievement Award and Animal Management Award. The University of Arkan-

sas awarded Paul with the John W. White Outstanding Team Award, the Extension Excellence Team Issue award, as well as the John W. White Research Award. Paul is most proud of receiving the Arkansas Association of Cooperative Extension Specialists Outstanding Researcher of the Year and the Arkansas Cattlemen's Association Producer Education Award because they show that his research and Extension efforts are important to the producers and stakeholders for which they are intended.

Sam Tabler (B.S.) received his B.S. degree in Animal Science from the University of Arkansas. After graduation, Sam spent the next 37 years with the United States Department of Agriculture working as an animal scientist at the USDA-Agricultural Research Service's Booneville, Arkansas location. The primary focus of his work pertained to research involving beef cattle, forages, and methods to improve the sustainability of family farms. Sam's research projects included cow/calf and



Sam Tabler

stocker production, heifer development, grass-fed beef, and forage establishment.

During his employment with the USDA, Sam accepted a detail with the USDA-Foreign Agriculture Service and served for

13 months as an agriculture advisor on a Provincial Reconstruction Team in Iraq, working with Iraqi farmers to improve production methods and accessibility to agricultural resources. While there, he received the Meritorious Honor Award from the U.S. Department of State and the Coin for Excellence from the Deputy Commanding General, 34th Infantry Division, during Operation Iraqi Freedom.

After retiring from the USDA, Tabler accepted a position with Heifer International,

working as a livestock production specialist at Heifer Ranch in Perryville, Arkansas. His time at Heifer Ranch was spent primarily getting the cattle operation started and helping the ranch to begin regenerative agriculture practices.

While currently engaged as a part-time forage consultant, Tabler spends time with his wife Audrey on their cattle farm near Booneville. They have two sons, Cody and Travis, who are also both graduates of the Department of Animal Science at the University of Arkansas.

Buck Pendergraft is a Purina district manager with over 27 years of experience in working with producers in developing feeding programs to utilize their resources for success. Buck was raised on a beef and dairy operation in Oklahoma. After graduating from Oklahoma State University in 1992, he went directly to work for what is now Purina as a livestock specialist. Buck became a district manager in 1995 and was relocated to Arkansas in 1998. Buck is currently active with leadership in ARPAS, Bible Study Fellowship,

AWANA and Arkansas Foster Care. He is married with three children and lives in Conway, Arkansas. Buck's passion for work comes not from his knowledge, but what he has learned from producers across the seven states he has worked. }



Buck Pendergraft

Outstanding Student Awards Presented to High Achievers

Each year, Bumpers College asks the department to select an outstanding undergraduate, transfer, masters, and doctoral student. This year's outstanding graduates are: Doctoral – Jianmin Chai; Undergraduate – Sophia Landers; Transfer – Mesa Kutz; Masters – Ellen Herring. The Paul R Noland Graduate Student Award is awarded to masters and doctoral students. It is named in honor of Dr. Paul Noland, a Department of Animal Science faculty member from 1951 until his retirement as department head in 1994. This year's Noland Award recipients are: Doctoral - Reagan Cauble and Masters - Ellen Herring.

Jianmin Chai is currently in his final year of Ph.D. studies, with an emphasis on the animal microbiome. He completed his M.S. in animal nutrition and feed science at the Chinese Academy of Agricultural Sciences and his B.S. in animal science at Hebei North University. Chai's research is focused on characterizing biogeography of the bovine respiratory microbiome and its relationship with bovine respiratory disease. During his studies, Chai has had the opportunity to generate preliminary data to support a successful patent application for bovine nasal microbiome biomarkers while working with a research team led by Jiangchao Zhao. He has published seven peer-reviewed publications during his Ph.D. study, with four additional manuscripts in preparation or revision.

Sophia Landers received her undergraduate degree in animal science, with a focus on pre-veterinary studies. She constructed her

honors thesis, "The efficacy of extended-release eprinomectin for the reduction of horn flies, face flies and fecal counts of parasitic nematodes in replacement beef heifers," under the supervision of Tom Yazwinski and Chris Tucker.

During her undergraduate career, Landers has served as President of both the U of A pre-vet and ballroom dance clubs, and was recently named one of the university's Seniors of Significance in recognition of her academic achievements, leadership skills and co-curricular activities. She graduated in May, and has been accepted into multiple veterinary programs where she plans to pursue her goal of becoming a mixed-practice veterinarian. As a veterinarian, Landers hopes to incorporate travel with the Christian Veterinary Mission to exchange knowledge and perform basic veterinary procedures worldwide.

Mesa Kutz is an Honors College student who was recently named a Dale Bumpers Distinguished Scholar. She is currently conducting research that focuses on the "Development and evaluation of feral swine control measures for Arkansas." Kutz is also a member of the U of A livestock judging team, and recently placed third in High Individual at the Arizona National event. She is also a member of Block and Bridle, in addition to the Collegiate Farm Bureau, Collegiate Cattlemen's and Poultry Science club. Kutz transferred from Fort Scott Community College, where she received numerous academic and extra-curricular accolades for her achievements.

The Paul R. Noland Graduate Student Award is given to the winner of an annual competition. The competition judges animal science graduate students in three areas: abstract, oral presentation, and curriculum vitae.

Ellen Herring is a graduate research student and teaching assistant under the supervision of Beth Kegley and Charles Maxwell. Prior to attending the U of A, she completed her B.S. in animal science at the University of Missouri. Herring has also served as a research technician at Land O'Lakes, where she worked in the swine research unit. In the future, she hopes to become an extension livestock specialist. *Herring was awarded both the Department's Outstanding Masters Student and Paul Noland Masters student awards.*

Reagan Cauble pursued her Ph.D. at the U of A with a focus on ruminant nutrition, including her abstract, "The effects of an injectable zinc solution as an alternative castration method in beef bulls at weaning," that earned her a Beef Council grant award. Additionally, she worked as a doctoral graduate assistant and teaching assistant, along with serving as President of the Animal Science Graduate Student Association. Prior to her studies at the U of A, Cauble earned her M.S. and B.S. degrees at Tarleton State University in Stephenville, Texas. Her thesis focused on "Fresh ham chop characteristics cooked to various internal endpoint temperatures," while she received her undergraduate degree in agribusiness. }

Awards/Departmental Activities

Four Animal Science Students Recognized as Seniors of Significance

Four Department of Animal Science seniors, Sophia Landers, Gabrielle Abbott, Noah Black-Ocken and Mersady Redding, were honored in late January as recipients of the University of Arkansas Seniors of Significance award.

A total of 71 seniors from across the university were selected from more than 600 nominations and were honored at a ceremony held at the Janelle E. Hembree Alumni House on Jan. 31.

The Seniors of Significance were selected based on their academic achievements, leadership skills and extracurricular campus and/or community activities. They each received a special gold honor cord to wear during graduation, along with a Seniors of Significance certificate. }



Animal Science Seniors of Significance: Sophia Landers, Gabrielle Abbott, Noah Black-Ocken and Mersady Redding

Animal Science Remembers Hilda, the Beloved Cannulated Cow

Animal Science lost one of the department's greatest educators in late May.

Hilda, the cannulated cow, taught countless people, young and old, about her amazing digestive system. She was one of several cows chosen to be part of the research and education programs in the department, but she stood out among her peers because of her easy going nature.

Over her 16 years, hundreds of kids on field trips and camps knew her by name, and talked for weeks about the chance to "put their hand in the cow."

Although Hilda retired from research a few years ago, dozens of graduate students had Hilda on their research projects to study forages, the way cattle digest them, and their effect on the environment.

Hilda will be missed by all of us in the Department of Animal Science, but we will think about her every time we introduce a new group of people to the wonders of ruminants and explain the way they can transform forages into energy and protein. }



Hilda served as one of the department's most well-known and beloved educators.

American Society of Animal Science Scholastic Achievement Awards

The American Society of Animal Science Scholastic Achievement Awards are presented to students who rank among the top 10% of the Department of Animal Science senior, junior, and sophomore classes.

The recipients must have the intention of pursuing a career in animal science. Those honored will have their names published in the *Journal of Animal Science*.

Seniors: Gabrielle Noel Abbott, Noah C. Black-Ocken, Hanna Marie Dickey, Ian McGregor Gilbert, Taulbee Brennan Gunter, Madison Paige Looper, Brady E. Martin, Victoria Liung Reid, Elle Anna Therese Rottman, Emma Marie Williams and Iris Jane Wormington

Juniors: Sabrina Grace Cox, Meredith Grace Halliburton, Jordan Taylor Looper, Shannon Elizabeth Rosing, Cailey Dawn Schmutz, Eva Caroline Short, Haley Amber Stanton, and Devin Elaine Whiteside

Sophomores: Emma Catherine Gildner, Katherine De-Vere Gilmore, Sine Mairead Pippenger, Nicholas Justin Rector, Grayson Lillian Robbins and Nicholas Donmichael Valentini }

Two Students Earn Undergraduate Awards in ASAS Competitions

Two Department of Animal Science students, Brady Martin and Alisun Watson, won awards for their presentations while competing at two American Society of Animal Science (ASAS) meetings.

At the 2020 ASAS Southern Section Annual Meeting, Brady Martin placed third overall in the Undergraduate Student Competition for his abstract, "Effect of Zelnate administered at initial processing in high-risk, newly received beef calves on performance and morbidity."

During the ASAS Midwest Meetings, Alisun Watson placed second overall while competing in the Undergraduate Poster Competition for her abstract, "The effect of sodium butyrate and benzoic acid on nutrient digestibility and fecal volatile fatty acid concentrations in nursery pigs." }



Brady Martin



Alisun Watson

Department of Animal Science Responds to COVID-19 Pandemic

The U of A System, Division of Agriculture and Department of Animal Science have stepped up to the plate to continue to provide support, information and various resources as the COVID-19 pandemic continues to affect each of our daily lives. Read on to discover some of the ways we are very much #StillOnTheJob:

- The U of A System Division of Agriculture has developed a comprehensive website for COVID-19 resources. We encourage you to visit www.uaex.edu/COVID19 for more information.
- Animal Science faculty participated in a U of A Honors College Forum (HNRC 300VH): PANDEMIC during the May 2020 Intersession (open to honors students and community members). This forum was via the Microsoft TEAMS venue, and it is also be available on the Honors College website at <https://honorscollege.uark.edu/>.
- With COVID-19 wreaking havoc on the livestock markets, the U of A Division of Agriculture and the Arkansas Cattlemen's Association connected on March 26 with nearly 200 cattle producers in an online webinar to discuss the impacts of COVID-19 on the cattle industry and offer guidance for navigating an unpredictable future. If you were unable to participate, the webinar can be viewed at: <https://youtube.com/7RhpUMfmvmk>.
- Animal Science faculty, along with numerous other university faculty, donated surplus supplies when the University of Arkansas for Medical Sciences ran low on personal protective equipment and other necessary supplies due to the COVID-19 outbreak. You can read more at <https://www.uark.edu/determined/index.php>.
- Animal Science faculty member, Chelsey Kimbrough, teamed up with her sister, Crystal Ahrens, to host a Facebook Live chat that discussed small ruminants on Friday, April 10. Dr. Kimbrough talked specifically about basic sheep and goat management practices, which is becoming especially important given the large amounts of rain in the area so far this year; and Ms. Ahrens discussed various topics related to meat quality. The duo recorded their live chat in order to upload the video and embed the link onto the U of A Extension Services website. }

Departmental Activities

Animal Science Hosts the 2020 Arkansas State Beef Quiz Bowl

Animal Science hosted the annual state-wide Beef Quiz Bowl this year in Fayetteville at the Pauline Whitaker Animal Science Center on Feb. 28. This program is funded by the Arkansas Beef Council through revenue collected from the Beef Check-Off. This U of A Cooperative Extension Service activity provides students in Arkansas an incentive to learn more about management, food safety, forage nutrition, quality assurance, and end beef products. Educational material was provided for county extension agents and vocational agriculture instructors to further the learning process beyond that of their beef 4-H and FFA projects.

Students were tested on many levels of question difficulty. The questions were compiled by the Animal Science faculty and covered all aspects of beef production. Teams were comprised of four students who competed in a double-elimination tournament.

Twenty-nine teams, 118 students, plus 4-H agents, Ag instructors and parents attended this event. Preparation for this



First place finishers, the Greene County 4-H - Green.

contest allowed students to sharpen their knowledge about beef cattle production. Additionally, students improved communication, goal setting, critical thinking, team building skills and ultimately enhanced their interest in beef cattle. This program has a great impact on educating students and encouraging a broadened perspective about their role in beef production, food safety

and consumer acceptance. These efforts will be continued through the Animal Science, Cooperative Extension Service, Arkansas Beef Council and agriculture teachers across the state. Congratulations to the Greene County 4-H - Green (pictured) for winning first, and to Salem FFA-1 who won second place. Greene County 4-H - White took home the third-place trophy. }

ANSC, County Extension Host Judging Boot Camp

Animal Science teamed up with the Washington County Extension service to host a livestock judging boot camp for local 4-H and FFA kids in the Pauline Whitaker Animal Science Center on Jan. 3.

Over 60 kids from five counties attended and were able to judge eight classes of sheep, goats and cattle. The group also worked on breeding evaluation, analyzing performance data, market evaluation and oral reasons. }



Livestock judging demonstration.

Celebrating the Career of Pete Hornsby

In late December, the Department of Animal Science celebrated the 42-year career of Pete Hornsby. He joined the University of Arkansas Division of Agriculture-Monticello campus in October 1977.

Pete managed the cow herd and U of A Bull Test Station. In July 1986, Pete moved to the U of A



Pete enjoyed fun and refreshments amidst family and friends.

Division of Agriculture, Department of Animal Science where he managed the beef cattle unit at Savoy. Pete is past-president of the Ozark Cattlemen's Association and Washington County Farm Bureau; he still is an active member of both of these groups.

In retirement, Pete plans to spend more time with his wife Jeannie, their grandsons and his cattle! The department THANKS Pete for his service to the Division of Agriculture and Animal Science, and wishes him the very best in retirement! }

Livestock Judging Earns Five Top-10 Finishes in Spring Contests

The livestock judging team earned five top-10 finishes throughout their spring 2020 schedule of contests.

The team opened by finishing second overall at the Arizona National Collegiate Livestock Judging Contest held on Dec. 31 in Phoenix.

Individuals judged and placed 12 classes, containing four animals per class of cattle, swine, sheep and meat goats. Contestants then verbally explained their placings to officials, who scored competitors as individuals and on a team basis. Poultry science majors, Mesa Kutz and Carson Hopkins, finished third and 13th overall, respectively, with Hopkins also ranking fifth in the cattle category. Jeffrey Marley, a student in agricultural education, communications and technology, was 14th, while animal science

majors, Alexa Wandrey (17th) and Alex Theodore (19th), also placed within the top-20. Additionally, Wandrey was second in the reasons category and fifth in sheep/goats. As a team, the U of A won the cattle category; finished second in sheep and oral reasons; and fourth in swine.

Then, throughout late January and early February, the team earned three more top-10 finishes in their scheduled contests.

In late January, the team placed eighth overall in a field of 26 while competing in the National Western Stock Show held in Denver. A few weeks later, the U of A group earned a fourth place finish overall in the Fort Worth Intercollegiate Livestock Judging Contest. The team also placed first in both cattle and horses, and third in reasons. Their third event featured a

trip to Jackson, Miss. to compete in the Dixie National Collegiate Beef Judging Contest. The team placed fourth overall, second in market steers and third in Brahman.

In their final contest of the spring, the U of A team was crowned champion of the 2020 Southeastern Livestock Expo Livestock Judging Contest held on March 11 in Montgomery, Ala. }



Team members with their awards in Alabama.

Students Attend Pre-Veterinary Symposium

In early March, 13 members of the pre-veterinary club, along with two faculty advisors (Jeremy Powell and Lauren Thomas), traveled to Virginia Tech University to participate in the 2020 American Pre-Veterinary Medical Association (APV-MA) Symposium.

Hosted by a different school each year, the annual symposium typically draws approximately 500 pre-veterinary students from all over the nation. During this year's two-day event, our students had the opportunity to attend lectures presented by

veterinary professionals, participate in hands-on wet labs and meet and greet with veterinary admissions counselors from all over the nation, including international schools!

As an added bonus, our students capitalized on the long drive to Virginia Tech by stopping in Knoxville, Tenn. to tour the University of Tennessee College of Veterinary Medicine. All students agree, that while the drive to and from Virginia was rather arduous, the value of the experience was well worth all the effort. }



Members of the U of A pre-vet club and faculty advisor, Jeremy Powell.

ANSC Team Competes in Academic Contest



Team members: Nathan Davis, Laykyn Rainbolt, Erin Falkenstein and Hailey Hilfiker

A team of four Animal Science students competed in an Academic Quadrathlon that featured a hands-on lab practicum and written exam held at Berry College in Rome, Ga., plus oral presentations and a quiz bowl in Chattanooga, Tenn., on Jan. 25-26.

The U of A team, consisting of Nathan Davis, Laykyn Rainbolt, Erin Falkenstein and Hailey Hilfiker, finished first in the animal behavior section of the lab practicum; second in swine; third in beef cattle; and fifth in the oral presentation. The event featured 15 teams from universities across the southern United States. }

Faculty Highlights

Department of Animal Science Welcomes Two New Faculty



Brittini Littlejohn

Brittini Littlejohn will be joining the Department of Animal Science faculty ranks with a focus on physiological genetics. Dr. Littlejohn received her Ph.D. from Texas A&M University, where her dissertation focused on “epigenetic programming of physiological functions by a prenatal stressor and genetic parameters of temperament in cattle.” She also received both her M.S. and B.S. from Texas A&M as an animal science major.

Dr. Littlejohn previously served as a post-doctoral associate within the Department of Animal Sciences at Mississippi State University where she was the principal investigator on various research projects, produced numerous journal articles and was a guest lecturer for an Advanced Physiology of Reproduction course. Dr. Littlejohn is slated to begin at the U of A in June.



Kelly Vierck

Kelly Vierck will be joining the Department of Animal Science faculty ranks with a focus on meat science and muscle biology. Dr. Vierck received her Ph.D. from Texas Tech University, where her dissertation focused on the “postmortem influences on beef flavor development and tenderness.” She received her M.S. from Kansas State University and her B.S. from Oklahoma State University as a food science major with an emphasis on meat science.

Dr. Vierck previously served as a graduate research assistant within the Department of Animal and Food Sciences at Texas Tech University where she taught numerous animal and food science courses, produced scientific research publications and participated in the National Cattlemen’s Beef Association-Product Quality Research Program. Dr. Vierck is slated to begin at the U of A in June.



**Dale Bumpers College
of Agricultural, Food
and Life Sciences
Alumni Society**

ARKANSAS ALUMNI

How to Join:

You automatically become a member of the DBCAFLS Alumni Society when you become an active member of the Arkansas Alumni Association. Join online at <http://www.arkansasalumni.org/> or call (479) 575-2801 to become a member today.

In small and big ways, your gifts change lives. Increasing private gift support is critical to moving the University of Arkansas and the state of Arkansas forward. If you would like to join other alumni and friends to support the Department of Animal Science at the University of Arkansas, contact: Mark Wilton, Development Office, Bumpers College, E-108 AFLS, University of Arkansas, Fayetteville, AR 72701, 479.575.2270 or email: wilton@uark.edu

Tell us about yourself!

You can also submit online under the Alumni tab at Animal-Science.uark.edu

We would like to hear how and what you’re doing. Please use this form to provide information about yourself that you would like to see in the Alumni news section of a future Animal Science Newsletter. Also, please let us know if you would like more information about the Animal Science Alumni Society.

Name: _____

Address: _____

Email: _____

Phone: _____

U of A Degree: B.S. ☐ Year _____

M.S. ☐ Year _____

Ph.D. ☐ Year _____

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10 Animal Science Newsletter

Researchers Awarded Grant to Study Bovine Respiratory Diseases



Jiangchao Zhao

A team of Animal Science researchers within the Arkansas Agricultural Experiment Station led by principal investigator, Jiangchao Zhao, received a grant from the Chancellor's Fund to further study bovine respiratory diseases.

Zhao will be joined in his efforts by two department faculty, Beth Kegley and Jeremy Powell, along with Animal Science postdoctoral fellow, Xiaofan Wang. The proposal will be funded in the amount of \$48,184 through October 31, 2020.

The proposal, titled "Validation of nasal microbiome biomarkers for the prediction of bovine respiratory diseases (BRD)," aims to achieve three primary objectives: To identify bovine respiratory biomarkers using a non-invasive nasal swab collection

technology for accurate prognosis, diagnosis and treatment of BRD; to cross-validate the two sets of biomarkers identified from a previous study with a current study; and to optimize the bovine respiratory microbiome biomarkers by combining the data from two studies to improve prediction accuracy.

To achieve these objectives, Zhao and his team have designed a longitudinal study to follow 90 fall-born bull calves collected equally from three Arkansas Agricultural Experiment Station locations over time and document changes that might occur through the beef production system. These calves will be weaned at the end of May and then transferred to the West Texas A&M University (WTAMU) feedlot to be commingled with 90 newly-received, high-risk calves recently purchased and shipped to WTAMU from auction markets on the same day as the relocation of the Arkansas calves. The calves will be

monitored for clinical disease every day and nasal swabs will be collected whenever a BRD case is observed, in addition to the scheduled sampling days (days 0, 4, 8, 12, 16, 20 and 24). These samples will be used to identify and validate the nasal microbiome biomarkers to predict the onset of BRD after sequencing and to develop random forest models for biomarker identification and validation. The team will then optimize the nasal microbiome biomarkers by combining data from the two animal trials to reach a greater sensitivity and specificity.

Given that bovine respiratory disease is one of the main health issues in the beef industry, the leading cause of morbidity and mortality rate in cattle, and contributes to a huge economic loss, Zhao and his team of researchers strive to cover the shortcomings in the progress made with respect to current prognosis, diagnosis and treatment therapy. }

Four Faculty Present at Events

Four Animal Science faculty members presented at various conferences, meetings and the 2020 ASAS Midwest Section throughout February and early March.

John Jennings presented at the AR Forage and Grassland Council where he discussed techniques for managing nitrogen in grass/legume systems; Shane Gadberry spoke to a large crowd at the River Valley Beef Conference where he discussed GoGreen and other value-added programs; Jiangchao Zhao presented at the inaugural Charles Maxwell Appreciation Club Symposium on early pig health and nutrition held during the 2020 ASAS Midwest Section Meeting and discussed how early-life modulation of the gut microbiome has long-term effects on swine health and production; and Department of Animal Science Head, Michael Looper, spoke to a full house at the first two Area Conferences and provided information about the U of A System, Division of Agriculture, the statewide heifer sale and the struggles of producers that the university is conducting research around. }

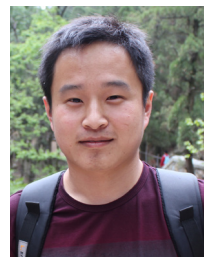
Graduate Student Awarded Grant to Study BRD in Cattle

Animal Science graduate student, Jianmin Chai, was awarded a grant from the Office of Research and Innovation and Graduate Professional Student Research Council to investigate the respiratory microbiome of beef cattle and the influences on bovine respiratory disease (BRD) using next-generation sequencing.

Chai, who will team up with U of A System, Division of Agriculture, Animal Science faculty member, Jiangchao Zhao, aims to characterize the nasal microbiome from pre-BRD and BRD cattle, as well as their healthy controls using a MinION nanopore sequencing platform. Nanopore sequencing

is a cost-effective way to profile bacterial communities, and detect, simultaneously, DNA and RNA virus species since the MinION is small, portable and runs on a laptop.

This design will work to better understand the longitudinal shifts of the microbiome in healthy and BRD cattle after entering the feedlot, and cross-sectionally compare the microbiome community between healthy and BRD afflicted cattle. }



Jianmin Chai

Published Research Featured in *Applied Animal Science*

Research conducted and published by Animal Science faculty that was funded by the Arkansas Beef Council was chosen to be featured as April's Editor's Choice in the journal, *Applied Animal Science*.

The research, *Comparison of meat quality and health implications of branded and commodity beef*, compared beef labeled as "naturally raised" and conventional beef to see

if there were differences in meat quality. Animal Sciences researchers within the Arkansas Agricultural Experiment Station included: Cari Keys Fuller, Jason Apple (retired), Janeal Yancey, Tim Johnson and Mike Looper.

The full article and published research can be accessed on the *Applied Animal Science* website. }

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